

SEPTEMBER  
1953

THERE'S A PHILIPS VALVE FOR EVERY SOCKET

# Amateur Radio

JOURNAL OF  
THE WIRELESS  
INSTITUTE OF  
AUSTRALIA

For the Experimenter  
and Radio Enthusiast



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an  
Amplifier?*

*then don't start  
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Base: Octal.

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3A4	10/-	7G7	10/-
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6C8	10/-	813	60/-
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6SN7	10/-	VR65A	2/6

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3509.1 Mc.	7015 Mc.	7058 Mc.	8126 Mc.
3513.1 Mc.	7016 Mc.	7058.5 Mc.	8150 Mc.
3573 Mc.	7020 Mc.	7062 Mc.	8155.71 Mc.
3695 Mc.	7021.5 Mc.	7063 Mc.	8161.538 Mc.
5460 Mc.	7032 Mc.	7110 Mc.	8171.25 Mc.
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6000 Mc.	7039 Mc.	7175 Mc.	8182.5 Mc.
6235 Mc.	7041 Mc.	7200 Mc.	8183.5 Mc.
7000 Mc.			8318.18 Mc.

SEPTEMBER — — — 1953

Vol. 21

No. 9

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**PRINTERS:**

"RICHMOND CHRONICLE,"  
Shakespeare St., Richmond, E.1.  
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.I., on or before the 8th of each month.

Subscription rate in Australia is 12/- per annum, in advance (post paid) and A15/- in all other countries.

Wireless Institute of Australia (Victorian Division) Rooms' Phone Number is FJ 6997.

# AMATEUR RADIO

Published by the Wireless Institute of Australia,  
Law Court Chambers, 191 Queen Street,  
Melbourne, C.1.

## EDITORIAL



## LET'S REJOICE WITH OUR EDITOR

As the heading indicates, our Editor has cause for rejoicing—"restored health." We, who have always enjoyed good health, do not realise the full value of this gift of nature.

Behind the scenes the work involved in the production of a magazine on a voluntary basis makes great demands upon the otherwise leisure hours of all the people concerned, particularly the Editor.

"Amateur Radio" has always been produced under such circumstances and for some years, in spite of physical disability and suffering, Tom Hogan, VK3HX, has carried on doing a noble job.

It is with sincere pleasure we are able to announce that, thanks to a miracle of medical science, Tom will soon be able to walk upright and enjoy health such as he has not done for years.

We hope that Tom will be able to continue his work with the magazine for a long time yet and feel sure that every member will want to join with us in rejoicing with Tom in his new found health and in thanking him once more for his untiring efforts in editing this, "our" magazine.

## FEDERAL EXECUTIVE

## THE CONTENTS . . .

The V.F.O. at VK3WI	2	Amateur Call Signs	14
Amateur Television—Part Three	5	Hints and Kinks	14
Technograph Printed Circuits	9	Prediction Chart for September	14
DX Notes by VK7RK	11	Federal, QSL, and Divisional Notes	15
Fifty Megacycles and Above	13	Correspondence	20

## WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

**VK3WI:** Sundays, 1100 hours EST, simultaneously on 3560 and 2000 Mc. No frequency checks available from VK3WI. Intrastate working frequency, 7126 Kc.

**VK3WI:** Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 and 146.25 Mc. Intrastate working frequency 7126 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

**VK4WI:** Sundays, 0900 hours EST, simultaneously on 3569 and 14342 Kc. 3560 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

**VK5WI:** Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5WI by arrangements only on the 7 and 14 Mc. bands.

**VK6WI:** Sundays, 0830 hours WAST, on 7146 Kc. No frequency checks available.

**VK7WI:** Sundays, at 1000 hours EST, on 7146 Kc. and 148.5 Mc. No frequency checks are available.

# THE V.F.O. AT VK3WI

BY J. C. DUNCAN,\* VK3VZ

A few years ago the writer was given the job of building the v.f.o. for VK3WI, and since it has been installed, quite a few requests have been received for details of the unit.

The stability of the v.f.o. has been well tested, it being used for the Accurate Frequency Transmissions since its installation. Drift during one minute key down periods has been measured by the Frequency Measuring Centre, and averages about 5 cycles, which is quite adequate for Amateur purposes.

In the interests of economy it was decided to utilise one of the Command Transmitters, and this disposal unit is compact enough to stand on the operating table without taking a great deal of room.

## REQUIREMENTS

The general electrical requirements were:

1. Output on the 3.5 Mc. band with sufficient output to drive an 807 through a co-ax cable.
2. Stability, such that tuning of following circuits in the transmitter would not be reflected back and cause detuning of the oscillator frequency—in other words, good isolation. This latter point incidentally being a very common fault in v.f.o.'s.

\*Technical Editor: 23 Parkside Avenue, Balwyn, Victoria.

3. Provision for either v.f.o. or crystal controlled output, for spot frequency operation.
4. Netting switch, to enable either the v.f.o. or crystal note to be picked up on the receiver dial. Having the crystal note available is very handy at VK3WI when setting the receiver on the Net frequency after the broadcast.
5. The best stability and freedom from drift we could get.
6. Good bandspread on the 7 and 14 Mc. bands, and also full coverage on the 3.5 and 28 Mc. bands, with direct calibration on the dial for all bands.
7. A means of checking the accuracy of the dial calibrations at any time.

The final unit as evolved covered all these points quite satisfactorily and has given trouble-free service since its installation.

To see how the Command Transmitter was altered it is necessary to study the circuit diagram of the altered unit **Fig. 1**, and a circuit of the original transmitter, **Fig. 2**.

To help in the description we will deal with our specification in the order shown.

## OUTPUT

(1) As only sufficient r.f. was required to drive a single 807, it was obvious that two 1625s would not be

required, therefore one of the parallel output tubes was removed, this provided us with a spare.

With the removal of one tube, it was found that the neutralising condenser was no longer necessary, so this was removed. The socket was broken out and an amphenol socket soldered in its place, to provide a place for the isolator.

As output was required on 3.5 Mc. the **Command Transmitter BC457** was chosen (4—5.3 Mc.). This transmitter does not cover the 3.5 Mc. band as designed, but with suitable parallel capacities this was achieved. The other reason was one of bandspread, which will be discussed later.

## ISOLATION

(2) Preventing the tuning of following circuits from affecting the tuning of the oscillator proved to be a problem, and was only overcome by removing the original 1626 triode oscillator, substituting a 12SK7, electron coupled oscillator, and inserting another 12SK7 as an isolator. With loose coupling to the co-ax line feeding the transmitter, the problem was solved.

## V.F.O. OR CRYSTAL

(3) Provision for either v.f.o. or crystal operation was not difficult as the hardest part here was the physical one of finding a place to put the extra tube required, and also the crystal sockets. A 6C4 was used, with a 40

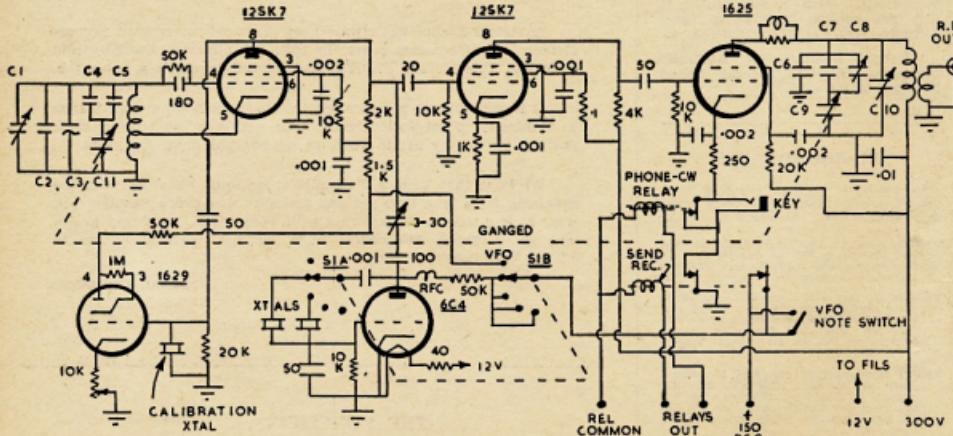


Fig. 1.

C1, C10—Main trimmers (existing).  
 C2—100 pF. N.P.O. (Ducon) ceramic or silver mica.  
 C3—Existing negative coefficient.  
 C4—150 pF. silver mica or N.P.O. ceramic (Ducon).

C5—20 pF. N750 ceramic (Ducon) 70 pF. mica (use high voltage type if 1625 is modulated).  
 C7—150 pF. N.P.O. ceramic or silver mica.  
 C8—3/30 pF. air trimmer (Phillips).  
 C9, C11—Main ganged tuning.

Note.—Slight change in value of C5 may be necessary to enable oscillator to

hit 3.5 Mc. in the range of the inductance slug. Alternatively, a 3/30 pF. air trimmer can be used here.

For maximum r.f. output: (1) Adjust C10 at 3.8 Mc.; (2) Adjust 1625 inductance slug at 3.65 Mc.; (3) Adjust C8 at 3.5 Mc. Repeat above sequence of adjustments several times.

ohm resistor connected in series with the filament to allow 12 volt operation. The circuit is a Pierce, with the series plate resistor kept as large as possible consistent with reliable operation. This reduces crystal current and cuts down drift. Also, the output from the crystal oscillator is greater than the variable oscillator, and the 3-30 pF. variable trimmer is used to set the output from the unit to the same level. This avoids complications and retuning in the transmitter when switching from crystal to u.f.o.

The five position switch, S1a and S1b, on the front panel gives four positions for crystal spot frequencies and brings in the v.f.o. on the fifth position.

A 522 crystal socket panel mounted on pillars took care of the crystal socket position, and was salvaged from a 522 disposal unit.

A shield was mounted behind the crystal sockets to stop a slight feedback between the crystal holders and the output coil of the 1625, which are adjacent, and to prevent shocks when changing crystals.

It will be noted that when the unit is on crystal, the main tuning condenser C9 in the plate circuit of the 1625 output stage is still in circuit, and this stage is operating as a buffer, therefore it is necessary to set the tuning dial to the approximate frequency of the crystal in use for best output.

In practice it was found that if the dial was set within about 50 Kc. of the correct frequency it was quite adequate.

The B plus supply for the oscillators comes from a VR150/30, being fed via one pair of contacts on the send-receive relay. Paralleled across the contacts is the Netting Switch (4).

To obtain space for the crystals, oscillator, and switch, the output loading coil was removed, a new aluminium front panel fitted over the old one, and a miniature chassis made up for the 6C5.

## STABILITY

(5) Stability and freedom from drift. In the original circuit one side of the filament to the oscillator was taken back through the cathode tap, and the other side of the filament through a coil interwound at the bottom end of the grid coil. It was found that a roughness in the note was due to this connection, and in spite of a change in the connections to the coil it still persisted, therefore the conventional circuit was reverted to.

With the change in the drive to the 1625, coil "C" was no longer necessary, and was removed from the inside of the variable oscillator coil. If it is considered too much trouble to remove it, it could be left and a short placed across the terminals to avoid any chance of resonance.

Temperature compensation of the oscillator proved to be no trouble as the existing negative coefficient condenser, C3 in Fig. 1, located in the oscillator coil compartment, had the correct value as later tests showed.

If you are not so lucky, temperature compensation is not a difficult job to accomplish, the main requirement being patience.

With the oscillator set so that we have maximum opening of the magic eye tube, which will be described later,

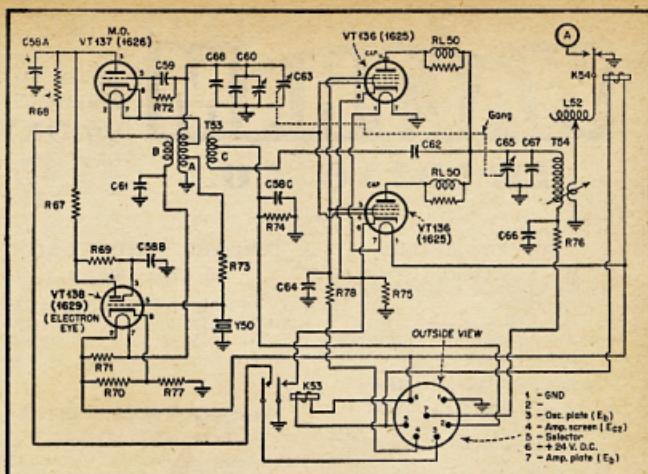


Fig. 2.—Circuit of the unmodified Command Unit. The following parts are identified:  
 C58A, C58B, C58C—0.05  $\mu$ F.      L52—Antenna loading coil.

C58A, C58B, C58C—0.05 uF.	L52—Antenna loading coil.
C58—0.00018 uF.	R67, R72, R75—51,000 ohms.
C60—Master oscillator padding.	R68, R76—20 ohms.
C61—0.006 uF.	R69—1 megohm.
C62—Fixed neutralising.	R70—1,000 ohms.
C63—Master oscillator tuning.	R71—126 ohms.
C64—0.002 uF.	R73, R74—15,000 ohms.
C65—Power amplifier tuning.	R77—390 ohms.
C66—0.01 uF.	R78—51 ohms.
C67—Power amplifier padding.	R150—Parasitic suppressors.
C68—3 pF.	T53—Oscillator coils.
C69—50 pF.	T54—Amplifier coils.
K53—Transmitter selector relay.	Y50—Crystal unit.
K54—Transmitter output relay.	7-prong female plug, outside view.

circuit, which is in the approximate centre of the band, leave the oscillator running for about an hour. If the eye has closed, carefully retune for maximum eye opening, noting whether the capacity of the tuning condenser went further in or out of mesh. If a decrease in capacity is noted, the usual case, a greater value of negative coefficient is required in the circuit; whilst if the capacity of the oscillator condenser has to be increased, the circuit is over compensated.

The condenser to use is a Ducon ceramic condenser, marked N750, which indicates a negative coefficient, and a decrease in capacity with rising temperatures. They also have a green dot on one end. The zero coefficient condensers in the same brand are marked with a black dot and also N.P.O., so use the right type.

A few hours spent in temperature compensating will make a vast difference to any oscillator, but one final word of warning. As the condensers are sensitive to temperature changes, don't try and make checks just after they have been soldered into the circuit, heat transferred through the pigtail leads will upset the ample cart.

leads will upset the apple cart.

Finally on the subject of stability we come to voltage stability. As the writer pointed out in his original article on a v.f.o. in August, 1947, "Amateur Radio," it is possible by suitably positioning the

oscillator immune from voltage changes of up to 100 volts change, in the range of 100 to 200 volts. Briefly, the method is as follows:—

Insert a resistor of about 15,000-20,000 ohms in series with the B supply to the oscillator, feeding both screen and plate, and wire a switch across it. Close the switch, shorting the resistor. Now tune in the note on the receiver and zero beat with the b.f.o. Open the switch and then carefully retune the receiver to zero beat, noting whether the v.f.o. had gone higher or lower in frequency, with the drop in plate and screen voltage. If the oscillator has **decreased in frequency**, the cathode tap is **too low** on the coil; and conversely, if the **frequency increased**, the cathode tap is **too high**. This test should be made of course with the VR150 regulator removed. In the case of the Command Unit the tap was found to be about optimum so was not altered.

## BANDSPREAD

(6) The requirements of good band-spread on 3.5 and 28 Mc., and also on 7-7.15 and 14-14.350 Mc., was quite a tough one, because with a fundamental of 3.5 Mc., the portion of the scale required for 7-7.15 Mc. was only 3.5 to 3.575 Mc., or putting it another way, 75 Kc. in a total scale length of 300 Kc., whilst the position for 14 Mc. wasn't

st the position for 14  
itter. We had one

# WALTHAM

## TRADING CO.

### WESTON METERS

0-2 Mil. or 20 Millivolt movement, calibrated 0-10, 1½ inch square flush panel mounting.

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#### Short Wave Receivers

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Bendix: Input 24v. 13 amp., output 300v. 0.260 amp., 150v. 0.010 amp., 145v. 0.050 amp. 29/6 Freight Forward.

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★ Low Tension Aircraft Cable, approx. 60 amp. 100yd. reel £3/10/-

★ Seven core Wire, rubber insulated, 100 yard reel ..... £3/10/-

★ Belden single core, braided and shielded, 15 strands of approx. 32 gauge. Ideal for Microphone lead. 250 feet coil ..... 45/- Postage and Packing: 6/-, Interstate 8/6.

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By General Electric

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	TU-7-B	4,500 to 6,200 Kc.	£2/10/-
	TU-6-B	3,000 to 4,500 Kc.	£3/10/-
	TU-9-B	7,700 to 10,000 Kc.	£2/10/-

### TRANSMITTER-RECEIVER

Type RT-34/APS-13

Frequency Modulated, approx. 450 megacycles. Valve line-up nine 6AG5, two 2D21, five 6J6, one VR105. Also contains Dynamotor, input 27v. 1.5 amp., output 285v. 60 Ma. £17/10/-

### RECEIVERS

Type 301A. Containing two 954, two 955, five 6AC7, one 6H8, one 879, one 5V4 and 24v. Switching Motor. Brand new ..... £10

### HAND GENERATORS

Gibson Girl hand crank Generators. Output: high voltage 250v. 100 Ma., low voltage 6-8v. 2 amp. Ideal for conversion power supply for portable Transmitter ..... £4/10/- Postage and Packing: 5/-, Interstate 10/6.

### TRANSMITTERS

Type TR3548

Containing Valves: one Rectifier VU11, one EF50, one 10 Cm. Westinghouse Magnetron valve complete with magnet, one Crystal Diode type IN21, one Blower Motor 24v. Brand new ..... £5/19/6

### H.F. TRANSMITTERS

Type GO9

V.F.O. control. Has two 801 and final stage 803. Frequency 3-18.1 Mc. on H.F., L.F. 300-600 Kc. All switches and condensers, coils and valve sockets are mounted in porcelain. All controls can be locked. Two R.F. output meters 9 amp., two 0-100 Ma. meters, one 0-300 Ma. meter, one 15 volt meter, and one 0.15 Ma. meter. Power supply has one 523 and two 1616 valves. Unit Relay control ..... £25

### ★ VALVES ★

#### "JUST IN"

BRAND	NEW IN CARTONS		
1H6	7/6	6L7	12/6
1K5	10/6	807	25/-
1K7	10/6	830B	60/-
2A3	15/-	954	7/11
6AC7	15/-	955	7/11
6B8	15/-	12A6	12/6
6F6	12/6	12S57	12/6
6K6G	12/6	2050	22/6
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6K7G	10/6	VR150/30	22/6
6K8	12/6		

### HEADPHONES

Low Impedance 500 Ohms ..... 12/6  
High Impedance 2000 Ohms ..... 25/-  
Postage and Packing: 3/6, Interstate 4/-

### RADAR TRANSCIEVER and INDICATOR UNIT

approx. 180 Meg. V.H.F.

Valve line-up in Transciever Type 1045: two RL18, one RL37, one GL 2050 (Thyatron), one VR135, six EF50, two VR150/30 (Voltage Reg.), one 5V4, one 6SN7, one 884 (Gas Triode), one EA50, two RL18. Unit contains a motor driven Selector Switch and two Polystyrene 6 position rotary coil turrets and an LF. transformer strip ideally suitable for use with television. Valve line-up in Indicator Unit Type 1047: seven EF50, one 897, one VR54. Also contains 3000 type Relay, 2000 ohms, 10 assortes potentiometers and two bank ceramic wafer switch and an illuminated scale. (5BP1 tube and shield not included). These two units are brand new and packed together in their original cases.

Price £21/10/- the two.

Transciever £15, Indicator Unit £7/10/6 (if supplied separately)

### COMMAND RECEIVER CONTROLS Type BC450

Three slow motion Dials, six single pole double throw Switches, four miniature Jacks, three Volume Controls (approx. 5,000 ohms), £1/15/- Postage and Packing: 6/-, Interstate 10/6.

# AMATEUR TELEVISION

## PART THREE—SYNCHRONISING SIGNAL GENERATOR

The synchronising signal generator is used to time accurately the firing instants of the time bases of both the Flying Spot Scanner and Receiver. It also provides signals for blanking the retrace of the spot in the receiver. Four signals are taken from it at low impedance, by co-axial cables. Two go to the Flying Spot Scanner, and two to the Video Mixer.

The Flying Spot Scanner requires:

1. A line frequency driving pulse (positive going) at 5,250 p.p.s.
2. A frame frequency driving pulse (positive going) at 25 p.p.s.

The Video Mixer requires:

1. A composite sync. pulse train (negative going) made up of both sync. pulses.
2. A composite blanking pulse train (positive going) made up of both blanking pulses.

Its circuitry is designed to provide as follows:

- A line sync. pulse of duration of 10 usec. at 5,250 p.p.s.
- A line blanking pulse of duration 20 usec. at 5,250 p.p.s. commencing 5 usec. in advance of the sync. pulse.
- A frequency divider chain of ratio 5,250/25, i.e. 210/1.
- A frame sync. pulse of duration 1 msec. at 25 p.p.s.
- A frame blanking pulse of duration 2 msec. commencing 500 usec. in advance of the sync. pulse, at 25 p.p.s.
- A sync. mixer to combine the two blanking pulses in the same polarity, and of the same amplitude.
- A blanking mixer to combine the two blanking pulses in the same polarity, and of the same amplitude.
- Cathode follower output stages to feed low impedance lines to the other units.

The sync. generator is quite complex, but while it could be simplified considerably, it was found that simplification usually caused some deterioration in performance.

The simplest sync. generator would consist of two free-running time bases, at line and frame rate, feeding both flying spot scanner and receiver, but to fulfil rules 2 and 3 laid down in Part 1 of this series, this unit was developed. Those features causing complexity are the frequency divider chain, and the delay circuit, to provide a "porch" between blanking and sync. pulses. This porch is a means whereby false operation of the receiver time bases, by picture content, can be prevented.

Five types of circuit, not in common use in radio, are used, and will be described briefly first. These are:

1. The triggered multivibrator or flip-flop.
2. The step counter.
3. Clippers, limiters, or slicers.
4. Differentiating networks.
5. Cathode followers.

### Triggered Multivibrator

This consists of a multivibrator with only one coupling provided, so that it has one stable state, and one unstable. When triggered by a signal, it "flips" to the unstable state, and after a period determined by the circuit constants, it "flops" back to the normal rest state, until triggered again. Its output is a pulse, commencing at the triggering point, and of duration variable at will.

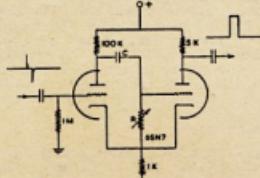


FIG. 8.—FLIP-FLOP OR TRIGGER MULTIVIBRATOR

One circuit is as Fig. 8, and another in the multivibrator portion of the step counter shown in Fig. 9. The Fig. 8 circuit is used in the sync. and blanking pulse generators, and the delay flip-flops. Representative component values are shown, with R and C controlling the pulse length from a value around 1 usec. and longer.

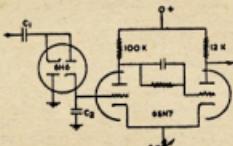


FIG. 9.—STEP COUNTER

### The Step Counter

The circuit shown in Fig. 9 is a step counter, for frequency division, the cathode resistance R controlling the counting rate (the number of incoming pulses accepted before the trigger multivibrator fires). It can be adjusted to count up to about 15 pulses before firing, and its output is a pulse suitable for the operation of another step counter. In the sync. generator, three counters are used—5 : 1, 6 : 1, and 7 : 1.

As the counting rate depends on the charge on the capacitor C2, the count will be proportional to the amplitude of the input pulses. Similarly, to control accurately the waveform and duration of all pulses, regulated high tension is essential. Positive 105 volts regulated supplies all circuits in the generator.

### Clippers, Limiters or Slicers

The pulses from the multivibrators are invariably somewhat distorted from the ideal square wave form, and double slicers are used to correct their shape. See Fig. 10 (a) and (b).

BY E. CORNELIUS,\* VK6EC

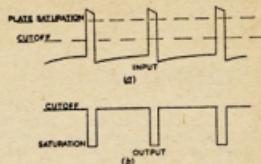


FIG. 10.—EFFECT OF CLIPPING

6SH7 tubes are ideal for this purpose, their short grid base accepting only the centre portion of the pulse, as shown by the dotted lines in Fig. 10 (a). This is readily arranged by the selection of optimum grid bias, and plate and screen voltages. Low plate and screen voltages allow early plate current saturation, and a high bias normally has the tube cut off.

For positive going pulses, grid bias is used, keeping the tube cut off between pulses. For negative going pulses, bias is low, and plate current near saturation. The pulse drives the tube to cut off, and holds it there till the trailing edge of the pulse allows the plate current to rise to saturation again.

### Differentiating Networks

To fire the flip-flops, and trigger the step counters, the leading edge of each pulse is taken as the reference point in time. Also, it is essential that the duration of the firing pulse should have no effect after the leading edge has passed. The differentiating circuit in Fig. 11 converts a substantially square pulse into positive and negative going pips of very short duration, and corresponding in time to the changes in direction, the leading and trailing edges of the pulse.

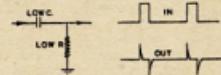


FIG. 11.—DIFFERENTIATION

There is substantially no output between pips, and it is usually arranged that the positive pip fires the trigger, the negative being ignored. The CR time constant is such that it is much less than the pulse duration.

### Cathode Follower

The cathode follower circuit shown in Fig. 12 consists in essentials of an amplifier with its load in the cathode circuit, instead of the plate. It has two main advantages in this work:

1. High impedance input.
2. Low impedance output.

The input capacitance of a triode is effectively—

$$C(\text{stray}) + C_{\text{gk}} + C_{\text{gp}} (1 + A)$$

where A is the stage amplification.

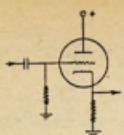


FIG.12 - CATHODE FOLLOWER.

The last term can be considerable, and its shunting effect on a high impedance input circuit carrying pulses of very short rise time can modify a pulse of the form shown in Fig. 13 (a) to that shown in Fig. 13 (b).

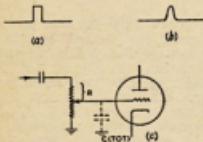


FIG.13-EFFECT OF SHUNT CAPACITANCE

In the cathode follower, the input capacitance is effectively:-

$$C(\text{stray}) + C(\text{in})$$

and the shunt capacitance effect is considerably reduced.

In a circuit of the form shown in Fig. 13 (c), unless a cathode follower is used to follow it, R (that part of the potentiometer in series with the grid input) and C<sub>tot</sub> (form an integrating circuit, and can completely distort a pulse, or sawtooth of high frequency, except when the potentiometer is in the full gain position.

To feed a low impedance line, the cathode follower is invaluable, its output impedance being 1/Gm in parallel with the cathode resistor. By suitable choice of tube and R<sub>k</sub>, the output impedance can be reduced to the order of 100 ohms, when the reactance of the shunt capacitances of the connecting cable and terminating circuit are negligible. Their effect on the wave shape will then be minimised. When it is considered that the time of rise of some pulses, from zero to full value, is less than 1 usec., we must consider harmonic components up to about 10 Mc.

Shunt capacitance can so alter the shape of pulses, that their leading edge is very ill defined (note Fig. 13 (b)), and useless for accurate timing. Cathode followers are therefore used in all circuits carrying high video frequencies, or short rise time pulses, when feeding cables more than a few inches in length.

#### THE SYNC. GENERATOR

Fig. 14 shows a circuit of the sync. signal generator. Oscilloscopes of the waveforms are shown in the drawing, and are referred to in this description of circuit operation by number, e.g. (1).

An RC oscillator (6SH7) gives an approximation to a sine wave output (1) at 5,250 c.p.s., with the frequency adjustable over a narrow range, such that its 105th sub-harmonic can be synchronised with the 50 cycle mains. The out-

put is limited to an approximately square waveform (2) by a 6SH7, and differentiated (3) to give primary timing pulses of short duration. The positive going pip is used, the negative being clipped (4) by a 6SH7.

This pip fires the line blanking flip-flop (6SN7) and the delay (porch) flip-flop (6SN7) simultaneously. The blanking flip-flop is adjusted to give a positive going pulse (5) of 20 usec. duration, which is clipped (6) by a 6SH7, and fed to the blanking mixer.

The delay flip-flop is adjusted to give a positive pulse of 5 usec. duration (7) which is differentiated (8). The positive pip (coinciding with the leading edge of the blanking pulse) is clipped (9) by half a 6SN7, and the negative, 5 usec. later, is inverted (10) by the other half of the 6SN7 and used to fire the sync. multivibrator. Thus the sync. pulse commences 5 usec. after the blanking pulse.

The sync. multivibrator, a 6SN7, gives a positive pulse (11) of 10 usec. duration and this is—

- (a) Clipped (12) by a 6SH7 and fed to the sync. mixer;
- (b) Fed to a cathode follower-clipper, which provides positive pulses (13) for the line time base of the flying spot scanner.

The output of the RC oscillator is also fed to another limiter, a 6SJ7, whose square wave output (14) feeds the first step counter of 5:1 ratio. This counter gives an output pulse (16) for every five (15) incoming, and uses a 6H6 and 6SN7, as do the other two counters. Its output is fed to the second counter (17), (18) of 6:1 ratio, which feeds the third of 7:1 ratio (19) (20). The output of this, at 25 p.p.s., is taken from the cathode, differentiated (21) and the positive going pip fires the frame blanking multivibrator (6SN7) and frame sync. delay or porch, multivibrator, also a 6SN7, simultaneously.

The frame blanking pulse (22) is clipped by a 6SH7 (23) and fed to the blanking mixer. The pulse duration is 2 msec. In the blanking mixer (6SH7) both blanking pulses are fed in through isolating 100,000 ohm resistors to the grid and the limited output is a combined line and frame blanking waveform (24) (25). As the video mixer requires a positive going blanking input, a cathode follower serves both to retain the polarity and to provide a low impedance source for the 75 ohm line (26) (27).

The frame sync. pulse delay multivibrator, a 6SN7, gives a pulse of 500 usec. duration, negative going, at its cathode (28). After differentiation (29), its trailing edge gives a positive going pip, to fire the frame sync. multivibrator, 500 usec. after the frame blanking pulse commences. The sync. pulse has a duration of 1 msec. (30) which is—

- (a) Clipped (31) by a 6SH7 and fed to the sync. mixer;
- (b) Fed to a cathode follower-clipper (6SJ7) which provides positive pulses (32) at low impedance, for the flying spot scanner frame time base.

The sync. mixer is a 6SH7, which, similarly to the blanking mixer, provides a composite synchronising signal. It also acts as a limiter, and a negative going waveform is taken from the cathode (33) (34) for use in the video mixer, for superimposition on the blanked video waveform.

This synchronising signal generator has proved highly stable in operation, and after initial line-up, has needed little attention.

#### LINE-UP PROCEDURE

The method of adjustment was as follows:—

1. Using an accurate audio signal generator, and a cathode ray oscilloscope as display mechanism, the RC oscillator was adjusted to 5,250 c.p.s.
2. With the oscilloscope observing the waveforms on the trigger multivibrator grids of the step counters (15) (17) (19), each is adjusted to its correct count, by means of the multivibrator cathode potentiometers.
3. The final frequency, approximately 25 p.p.s. is then compared with the mains, and the RC oscillator frequency adjusted so that an exact 25:50 c.p.s. ratio is obtained.
4. The line blanking pulse waveform is displayed on the c.r.o. to show at least two pulses, and the distance between the leading edges adjusted to 4". One pulse is centred, and the pulse width adjusted to 0.4", corresponding to 20 usec. (one-tenth the line period).
5. The line sync. pulse is adjusted similarly to 10 usec. duration.
6. The frame sync. pulse is adjusted to 1 msec., 2½% of the frame period.
7. The frame blanking pulse is adjusted to 2 msec., 5% of the frame period.
8. By means of a temporary mixing circuit, similar to the blanking and sync. mixers, the line blanking and sync. pulses are superimposed. See Fig. 15 (a) (b) (c).

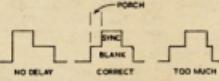


FIG. 15 - PORCH ADJUSTMENT

The delay flip-flop pulse duration is then adjusted so that the line sync. pulse commences 5 usec. later than the blanking pulse.

9. Using the same circuit, the frame sync. and blanking pulses are superimposed, and the frame "porch" adjusted to 500 usec.

#### POWER SUPPLY

This provides 105 volts regulated at 75 Ma., and 6.3 volts a.c. at 12 amps. for the numerous heaters.

(To be continued)

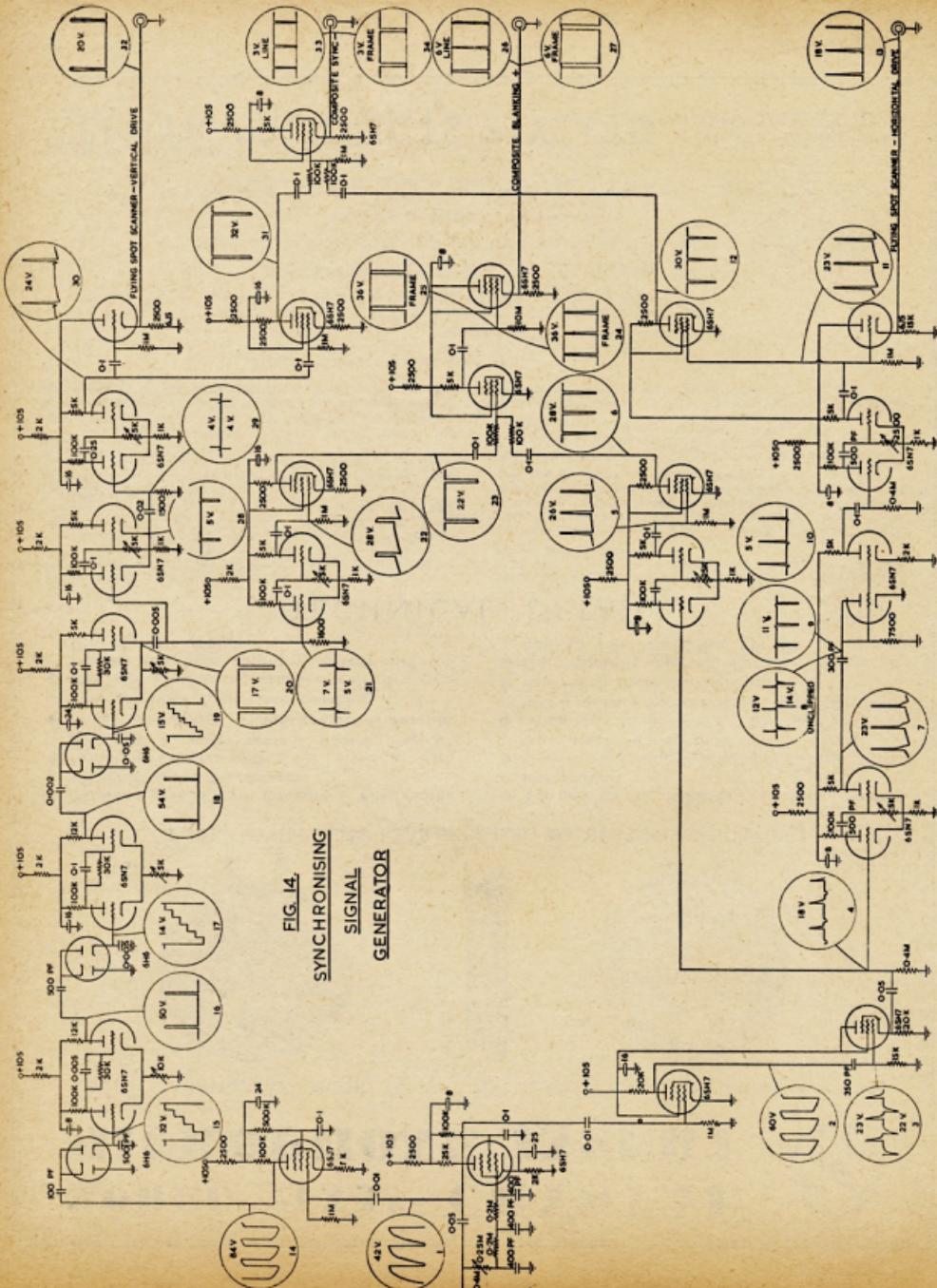
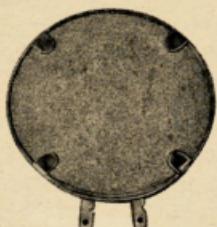


FIG. 14.  
SYNCHRONISING  
SIGNAL  
GENERATOR

# MODEL "1XA" CRYSTAL MICROPHONE INSERT



AUSTRALIAN MADE — — FOR AUSTRALIAN CONDITIONS



FITTED WITH PLATED REAR SHIELD TO ELIMINATE HUM PICK-UP

- Patented crystal unit guarantees outstanding efficiency and performance.
- Protected against ingress of moisture with approved moisture sealed crystal element.
- Small — compact — lightweight — durable.
- Will not blast from close speaking.
- Precision engineering ensures realistic reproduction and high output with long life and dependable operation.
- The only unit available with a genuine sintered metal filter.
- Good high frequency response ensures excellent speech reproduction.
- Aluminium diaphragm mechanically protected and frequency controlled by "Zephyrfil" filter.
- Australian made throughout.
- Only carefully selected cements used throughout, to suit Australian climatic conditions.

## TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrfil" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved. Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

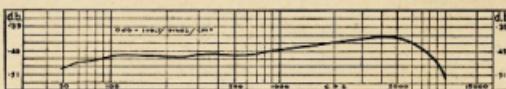
When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case 1½" diameter (rear), ½" thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.  
Output Level = -45 db (0 db = 1 volt/dyne/cm<sup>2</sup>)  
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

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## THE V.F.O. AT VK3WI

(Continued from Page 3)

however, the gearing on the dial was such that we had about 300 degrees in which to place the scale as against the usual 180 degrees for the normal dial.

To have two lots of oscillator coils or condensers and a switching system would have been too complicated, and in addition, we didn't have the room, so we took the easy way out. By using the BC457 Unit, which originally covered 4-5.3 Mc., and connecting parallel capacity across the coil to bring it back to 3.8 Mc. with the main tuning condenser out of mesh, and then connecting additional capacities in series with this main tuning condenser to spread the calibrations out such that the 3.5 to 3.8 Mc. band covered the whole scale, the problem was beaten.

Due to the fact that we were connecting about 175 pF. as a pad in series with the tuning condenser of about 175 pF., the lower frequency end of the scale was spread considerably. We then end up with a dial in which the calibrations are deliberately made non-linear, and the maximum spread is at the low frequency end where we want it. This gives just under half of the total scale for 7 and 14 Mc.

The metal dial was removed and a piece of white celluloid marked with a pair of dividers to the same diameter as the original dial. A hole was drilled to take the centre boss and the small locating pin marked and drilled. An 8BA screw was tapped into the locating pin hole so that the dial could not turn out of position. The celluloid was sanded with glass paper so that it would take ink when finally calibrated.

### CHECKING CALIBRATION

(7) The system used to check the calibration of the original Unit was retained. Briefly, a small portion of the r.f. from the oscillator is fed to the grid of the electron eye tube, which has a crystal connected between grid and ground. The cathode resistor is adjusted and pre-set to give almost complete closing of the eye when the oscillator is away from the crystal frequency. At the crystal frequency the eye opens and a red line is drawn on the dial calibrations at this point.

To reset the calibrations the dial is set to the red line and the oscillator capacity adjusted through the small

covered hole in the top of the case for maximum opening of the eye.

In the original Unit the eye is viewed by means of a mirror on the hinged lid at the rear of the case. This was modified and the eye mounted to protrude through the front panel. By supplying the electron eye through the same h.t. connection as the variable oscillator, the eye only lights up when the v.f.o. is on, and therefore acts as a warning signal that the transmitter is on v.f.o. control.

Only several points in the circuit remain to be discussed. Firstly, the relay circuits. The relays are 24 volts d.c. jobs and are the type used in the original. A second one was salvaged from a wrecked unit in the junk box.

The send-receive relay is the lower one in the cathode lead to the 1625, and has two sets of contacts, the first set as mentioned previously cuts the h.t. to the oscillators and is shorted out by the netting switch, whilst the second set of contacts opens the 1625 cathode.

The Phone-C.W. relay uses only one set of contacts, which are open in the c.w. position. The cathode circuit is then closed via the key jack, and key.

Secondly, the plate condenser of the 1625 must be treated exactly like the oscillator so that they will track properly, and is therefore fitted with series condensers for this purpose.

### FINAL ADJUSTMENT

The tuning dial is set to the high frequency end of the scale, condenser out of mesh, and with a receiver tuned to zero beat with a frequency meter set on 3.8 Mc., the oscillator trimmer (original condenser) is adjusted to bring the oscillator to 3.8 Mc.

With the receiver S meter and a small piece of wire on the output terminal of the Unit, the trimmer on the 1625 plate circuit is adjusted for best reading on the meter.

Next turn the v.f.o. main dial to in mesh, and set the frequency meter and receiver to 3.5 Mc. and adjust the slug on the oscillator to bring it to 3.5 Mc. repeat the full process several times until the oscillator covers 3.5 to 3.8 Mc. exactly. Then with the receiver tuned to the output on 3.5 Mc., adjust the 3-30 pF. pad in the 1625 output circuit for maximum reading on the receiver S meter.

Finally check at 3.8 and 3.5 Mc. ends and touch up if necessary. At this stage check the temperature compensation as

set out previously and when you are finally satisfied, complete the dial calibrations.

The zero dial engraving was not suitable as the four bands were printed on the scale, so a small celluloid escutcheon was made up, with a hair line engraved in the celluloid, so that accurate readings could be made on all bands.

One final point, the socket on the rear of the Unit was removed and a male coaxial plug fitted, all power connections being taken from this point.

A co-ax connector handled the r.f. output side of things.

Well that's the story, and there is no reason why you can't duplicate this Unit, and end up with a nice compact v.f.o. to sit on your operating desk, one in which the quality of components and ruggedness are far above that usually available to us and for a lot less than it costs to build too, thanks to disposals.

## TECHNOGRAPH PRINTED CIRCUITS

We have received a very interesting little book giving details of the development of printed circuits. This book traces the history of the circuits to their present state of development and gives many interesting applications to which they are ideally applicable.

For instance, in transformer construction spiral coils are printed on insulating paper, which are repeated many times on strips of paper hundreds of yards long. They are then folded and stacked, the centre punched out to slip over the iron core, and each spiral end spot welded to the next. In this fashion the transformer winding is built up.

In another case, when foil is used as a conductor in high frequency circuits due to "skin" effect, very thin foil will carry astonishingly high loading. Thus in freely radiating circuits, copper foil 0.001 inch thick and with a surface width of one-eighth inch, a loading of 10 amp. or more can be carried. Therefore instruments can be reduced in weight, and there will be a large saving in metal cost.

The above examples will serve to illustrate the interesting information contained in this small book; our copy being received from R. H. Cunningham Pty. Ltd., of 118 Wattletree Road, Armadale, who can supply all information.

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**AUDIO OUTPUT TRANSFORMERS**

\* Response includes Correction due to Negative Feedback. \*\* For use with Rola 12-OX Speaker.

Type and Mounting	Impedance—Ohms		Freq. Response	Rating	Typical Application	Price
	Primary	Secondary	DB± C.P.S.	Watts		
893-23	5,000, 7,000	2, 3.7, 8, 12.5	1 *40-15,000	5	Single 6V6G, 6AQ5, etc., to V.C.	28/3
894-23	500	2, 3.7, 8, 12.5	2 50-10,000	5	Line to Voice Coil	26/3
900-22	2,500, 5,000	2, 3.7, 8, 12.5, 15	1 *40-15,000	15	Single 807, EL34, etc., to V.C.	57/6
896-9	8,000, 10,000	2, 3.7, 8, 12.5, 15	1 30-15,000	15	P.P. 6V6Gs, A or AB1 to V.C.	62/6
897-9	8,000, 10,000	100, 125, 166, 250, 500	1 30-15,000	15	P.P. 6V6Gs, A or AB1 to Line	62/6
763-9	3,000, 5,000	2, 3.7, 8, 12.5, 15	1 40-20,000	15	P.P. 2A3s, A or AB1 to V.C.	62/6
809-26	500	2, 3.7, 8, 12.5, 15	1 50-20,000	15	Line to Voice Coil	42/6
870-26	10,000	2 or 8	1 *20-20,000	*6	P.P. 6V6Gs or 807s as Triodes	57/6
871-9	10,000	2 or 8	1 *20-20,000	12	P.P. 6V6Gs or 807s as Triodes	81/-
872-9	10,000	3.7 or 15	1 *20-20,000	12	P.P. 6V6Gs or 807s as Triodes	81/-
891-22	6,600	83, 100, 125, 166, 250, 500	1 50-12,000	35	P.P. 807s, AB1 to Line	82/6
892-22	3,200	50, 62, 83, 125, 250, 500	1 50-12,000	55	P.P. 807s, AB2 to Line	97/-

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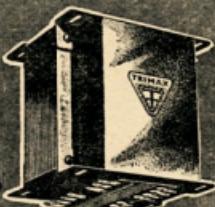
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# FIFTY MEGACYCLES AND ABOVE

## NEW SOUTH WALES

59 Mc.: A little activity has been noted on six this month. VK3, 2ABH, 2BHE, 2XX, 2AJR, 2VW and 2JX in Sydney, and VK3, 2BZ, 2ADT, 2AGY, 2RU and 2XO in the north have been active. Other carriers have been heard. Major 2RU expected to make through to Interstate to place this winter.

We are all pleased to note that duplex from 50 Mc. up is now allowed. This should provoke much activity on the Mc. band.

The first meeting of the V.h.f. Group was held at Science House on 3rd July, the roll-up being fairly good considering the extreme cold and wet night. A general discussion on mobile equipment was held. Bob 2ABH took place. The lectures were given by 2ANF and 2HL. John on mobile rx's, and Horrie on antenna, assisted by 2AJZ as draughtsman.

The discussion and lectures proved not only interesting, but very instructive. Dr. Bob Black gave a talk on behalf of the meeting.

John 2ANF received nice trophy, won by him at the Autumn Field Day. Congrats John. A continuation of this discussion will take place next meeting, 7th August.

A contest was held on the 17th and 18th July from 7 p.m. until 11 p.m. on Saturday and Sunday nights. It was a fairly good response. 32 stations in Sydney participating, and one DX station, 2OT, of Hamilton, Newcastle, who was there both nights on 144.3 Mc. approx. At this went to 2ABH, 2BHE and 2RU, but not 2AGY, 2BZ and 2HO tied with 43 contacts. Full results next month.

We have to welcome a number of new stations onto 144 Mc., and are pleased to see them: 2VC, 2XW, 2ABH, 2AJR, 2HL, 2EWE of Cessnock, 2ARO, 2AWH of Belmont. We wish these chaps good hunting. New prospects for 144 Mc. are George 2GX of North Ryde, and 2ES of Crows Nest.

Arthur 2MK of Cessnock is also a newcomer. 2AVK has been heard once or twice! Stan 2LY has threatened to come on two again. 2IO has also returned! 2XX has gone a long way towards completing his new 12 x 18 ft shack. I also hope Ted will build new gear to go with it!

We have been asked to print the mid-winter activity list, will here it is: Sydney—2AJR, 2ABH, 2BHE, 2OT, 2PQ, 2CH, 2HO, 2AJZ, 2HL, 2ANK, 2NP, 2AQH, 2HE, 2VL, 2FJ, 2VC, 2HM, 2SA, 2AVK, 2ANF, 2ABR, 2IV, 2VR, 2XX, 2IO, 2ABD, 2LS, 2MJ, 2AOE, 2ABZ, 2Y, 2MO, 2AAG, 2ARO, 2AWH, 2EWE, 2ABH, 2ABZ, 2VW, 2BZ, 2AGH, 2AJR, 2ATA, 2AJA, 2KS, 2HK, 2EC, 2OT; not too bad for winter time. It's good to hear old timer Arthur 2AJA back in harness. Keep a lookout for 2FJ fellows, he has at Narrabundah, north of Sydney; he has a nice signal.

Northern station activity during winter was Max 2OT, Hamilton, Newcastle. President of Hunter Branch, A.R., during the election been and ten years input, has been worked in Sydney many times on c.w. Phone was heard on one occasion. 2BZ put a mighty signal into Sydney too, S9, but occasionally QSB to S6 at this location. 2ABH has been heard in the beam swinging to S9 once again in Sydney.

2ABZ, 2LG, 2APQ, 2ABD, 2XX, 2AGB, 2ANF and 2HE report 2XX's signal good in Sydney. This is Con 2PZ, 2GA, 2ABH, 2ABD, 2VW, 2OT. There are still missed many winter DXQ's through on 144 Mc. Will Sydney stations equipped with c.w. West at 8 p.m. each night and listen at 8.05 p.m., then North? 2WH says it's a very likely band since 2ANF had to cut out completely.

We welcome Phil 2ATA, located at Edgecliff, Sydney, to 144 Mc. His frequency is 144.1 Mc. Crystal controlled tx and super regen rx. Also Gav 2LG on 144.3 Mc. He has a very nice signal. Xtal control tx and a tunable osc. converter.

From the North (Newcastle) we have that Bill 2XW has been going on 144 Mc. since July. Les 2QB and 2KV have been on. We hope to QSO some of these stations from Sydney.—2HO.

## VICTORIA

Due to unforeseen circumstances, the lecture intended for the July meeting had to be postponed. It was arranged as an alternative to visit the Demonstrations of Modern Telecommunications Equipment exhibition being held at the time in the F.M.G. Training School. The section devoted to radio was of particular interest, and included examples of broadcast control networks, mobile telephones, etc. In the telecommunication control, the telephone network was shown in operation transmitting sample messages via landline. Many other items of interest were on display.

After the exhibition closed, a brief meeting was held at the W.I.A. Rooms. 3LN reported

the progress on 2 mx mobile activities and its relation to C.D. emergency networks. There is an increasing interest in mobile work and you are invited to participate in this aspect of Amateur radio. Considerably simple gear can be used on 144 Mc. An input of 2 to 10 watts to the final is suitable for the tx, and a non-radiating super regen rx with r.f. stage has been used quite successfully. The h.t. supply for the tx is obtained from a 125 volt 500 r.p.m. generator or vibrator pack. A number of articles dealing with compact portable and mobile gear have appeared in the various Amateur magazines. See "QST" for April, 1952, and June, 1952, for typical examples.

Country v.h.f. activity continues to be appreciable, those at present on 6 m include 3CI, 3DI, 3GM, 3V1, 3RR, 3U1, 3APF, 3HZ, 3ZL and 3BW. 3AYJ operates during week-ends from Mt. Dandenong on the freq. of 52 Mc., while on 2 m are 3EA, 3GM, 3UQ, 3QH, 3U1, 3APF are active. Also 3AEN, 3ATG and 3AEB are on this band at week-ends from Clematis, Sassafras and Lower Macedon, respectively. Apparently, these are in the Midura area and renewed activity is reported to come from 3AGD, 3AKR and 3HG. 3ACE at Yea is planning to get on 6 and 2 mx. 3ABO has recently come on 2 mx from Clayton.

A few Interstate openings occurred during July and 6 mx has been reported was on Saturday evening, 25th when a number of stations throughout VK3 were contacted by both 4BT and 4KK.

Modifications to antenna farms have taken place at QTH's of 3CP and 3CL. 3CP has built

an eight el. broadside array for 2 mx. Elements are made of  $\frac{1}{4}$ " diam. copper tube, 38' long, and are arranged in a stack of four pairs. The vertical distance between pairs is 40". The height of array overall is 121 $\frac{1}{2}$ ". Phasing lines are 16g wire 2 $\frac{1}{2}$ " apart, with the 300 ohm tubular feeder connected to the centre of the middle pair, i.e. to the electric centre of the array, and for correct phasing the top and lower pairs are crossed over. Height of beam above ground is 51' 6" to the top pair of elements. 3CI now has his over 30 six mx beam 40 ft. high. It consists of a stack of elements with a vertical distance between them of 2 $\frac{1}{2}$ ". Element lengths: directors 9", folded dipole radiators 6", reflectors 10". Element spacing from immediate to next is 2 $\frac{1}{2}$ " to reflector 3". The folded dipoles are made with 20 ft. 16g wire, spaced 9/32" between. An electrical half wave length of 300 ohm ribbon is connected between folded dipoles and at that centre the 300 ohm ribbon is terminated. Both stations have found a considerable improvement in signals since erecting these beams.—3ABA.

## SOUTH AUSTRALIA

I know that it was bound to happen sooner or later and so I have to enclose to you all that we are to have another V.h.f. State Contest in 1953. Time to be held: October, beginning at 0001 hours, Sunday, 18th, and ending at 0001 hours, Monday, 19th, 1953. For actual scoring, out of 72 consecutive hours, it will be allowed. More details in the October issue of "A.R." of the rules and regulations and boundary restrictions.

Having the satisfaction of noting that our agenda item about duplex on 50 Mc. and above has been approved by the P.M.G. Dept, it now behoves all those who rose up in indignation,

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when it was closed down earlier, to make good use of the facility. So to it chips.

The Yanks are also enthusiastic about the possibilities of 50 MHz. DX in the fall months, i.e. August equinox, with possible bouts of sporadic E and I had it in mind to remind you this month that in Clem SGL has borne out my predictions by announcing recently that, whilst portable 'other side of Mount Lofty' he heard 4BT in conversation with another VK4, signal strength good. Maybe we will hear some 50 Mc. signals during the R.D. Contest.

50 and 2 mds has been predicted except for

a spot of sporadic E, but I am not getting

cluttered up with signals. Even Ross SAJ, having listened and listened on 2 mds, is about

to have a nibble and Pete SPM, established at

Mount Lofty, is putting out a test.

Join the Jesters waving merrily in the

breeze! Believe it or not, Nobby SKW is up-

holding the v.h.f. motto and has been heard

well in Pirlie by the enthusiasts, but having a

post in Whyalla, I think, has had a bearing.

However, John S. 51W gave his poor brain child

to poor Nobby—SKW and SITL please note!

Maybe though it's a case of first come first

served.

Portable activity still keeping quite a few active; Vic 53H has built a 'fix-ix' into an old

gramophone case with an a.c. or d.c. vibrator supply.

Quite an idea chaps, 'at home' or abroad'.

Operation: His 'fix' is in Selleck's

kit and all the masts are 100' aluminums at

the other end of the Gulf. And woe is me! It has

happened again—remember SLO at Mallala? Remember 50OC at Mallala? Need I say more?

52R, portable at Sheep's Hill, using a J antenna

resonator, has been used for the last few

as well—man after my own heart, Sir! Brian

SFH favours Mt. Osmond and has worked

Greencroch 58-9 (hope I've that right)—5FU was

reported using a 6ACG last month!!

Progress is good. In the Field St 500W has

his converted A.S.B. working well with an S

meter and all refinements like double conversion

but there's always a nigger in the wood pile.

Bob B. has got the addition of a third

oscillator running in the Tx whilst trying to

work duplex has the delightful habit of introducing all the b.c. stations into the shack at

once. 5XK is a constant pain in the back with

Ray still out of his regular dipole. Sunday

particulars—SUNDAY mornings

SUNDAY also pretty active these days.

Technical Editor is screaming for articles

so what about some dope on some other

subject? John Keith, S. 54B, Bob, you

should be good for one on the A.S.B. conversion.

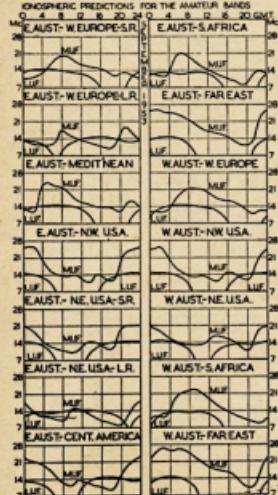
Hope you all appreciated the reprint on

v.h.f. converters in August "A.R." There should

be more of it, but we do need conversion gen

freely—5XK.

## PREDICTION CHART FOR SEPT., 1953



# AMATEUR CALL SIGNS FOR THE MONTH OF JULY, 1953

## ADDITIONS

### New South Wales

2AQW—Dubbo Postal Amateur Radio Club, Divisional Headquarters P.M.G.'s. Dept., Gobborah Road, Dubbo.  
2ATI—Newcastle Technical College (Dept. of Education), Wood Street, Newcastle.  
2ATJ—Newcastle Technical College Amateur Radio Club, Wood Street, Newcastle.

### Victoria

3ADI—G. Turner 2 Orion St, Nth. Balwyn, M. N. Russel-Clarke, 127 Manningham St., Parkville.  
3ANT—N. H. Townley, 12 Harry St, Maidstone, W.J.  
3AQA—R. W. Amos, 21 Harrison Ave., Burwood.

### South Australia

5IR—I. G. Gillies C/o D.C.A., Daly Waters.  
5MQ—R. E. Read, C/o D.C.A., Burwin, N.T.  
Postal: Box 234, Darwin.  
5MV—(Rev.) M. H. Winkler, 10 Catherine St., Clapham.  
SUS—P. R. O'Connor, 1 Wilsden St., N. Walker-ville, Adelaide.

### Territories

9OK—L. J. King, Norfolk Island.

## ALTERATIONS

### New South Wales

2BC—Flat 1, 122 Old South Head Rd., Bellevue Hill.  
2WZ—15 Daisy Avenue, Penshurst.

## HINTS AND KINKS

### FINGERNAIL POLISH AS A CONSTRUCTIONAL AID

There are several ways in which ordinary clear fingernail polish can be used to advantage during your next building project. It can be used to hold a nut in place on the underside of a chassis or on an interior surface of a compartment while a component, cover plate, etc., is being mounted, thus leaving both hands free for the handling of parts and tools. A few dabs of the polish will also serve as a substitute for lacing when a small within-the-chassis cable is made up and it can also be used to anchor a wire or small cable within a unit. Be sure to apply a small quantity of polish to both the insulation and the metal when one or more wires are to be bonded to the chassis.—"QST."

## INCREASING THE SENSITIVITY OF GRID DIP METER FREQUENCY MEASUREMENTS

When obstruction such as partitions, partial shields, etc., prevent adequate coupling between a variable tuned circuit and a grid dip meter, try the following stunt:

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2ZN—Ryrie Street, Braidwood.

2ABY—Mayfair Flats, West Esplanade, Manly.

2AZB—Upper Avenue, Brough.

2ATH—Postal Address: P.M.G.'s. Box 304, Sydney.

### Victoria

3JV—21 Gothen Street, Heidelberg.  
3LV—363 Bay Road, Cheltenham.  
3L—25 Royal Avenue, Croydon.  
3ZR—25 Market Street, Sandringham.  
3AFW—2 Moustar Street, Pascoe Vale.  
3AFC—Flat No. 2, 468 Station Street, Carrum.  
3ANC—Toora.  
3AR—22 Beverley Grove, Mt. Waverley.  
3ATD—63 Gorse Street, Bendigo.

### Queensland

4AL—22 Muriel Street, Aubervillle, Maryborough.  
4L—Collandoon Street, Goondiwindi.  
4WU—20 North Street, West End, Townsville.  
4UX—Golf Links Road, Atherton.

### South Australia

5AL—Wenonah via Tannen's Creek.  
5RA—8 Gilbert Street, Gilberton.

### Western Australia

6KX—8 Emerald Terrace, West Perth.

### Tasmania

7AX—22 High Street, Bellerville.

## DELETIONS

New South Wales: VK2 2AMC (now operating under VK5MQ), 2MP (now operating under VK5EMV), 2ACK (now operating under VK5OK), 2AQK (now operating under VK5QA).

Victoria: VK2 3NE, 3AIG (now operating under VK5IB), 3ARG.

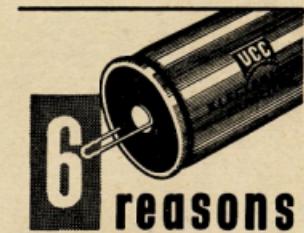
South Australia: VK5XY.

Western Australia: VK5 GGR, 6MW.

Tasmania: VK7CN.

quency will be indicated by a change in the receiver beat note.

The above system permits a frequency measurement to be made even with coupling conditions which prevent any noticeable dip in g.d.o. grid current. The scheme also allows r.f. signal generators and other types of variable oscillators (as long as they are not too well shielded) to assume the frequency measuring duties of a grid dip oscillator when the latter is not available.—"QST."



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# FEDERAL, QSL, and



# DIVISIONAL NOTES

## FEDERAL

**Fed. President:** G. Glover, VK3AG.  
**Fed. Secretary:** G. M. Hull, VK3S2, Box 2511W, G.P.O., Melbourne.  
**QSL Bureau:** R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.11, Vic.  
**DX C.C. Manager:** G. I. Morris, 50 Eighth Street, Parkdale, Vic.

## NEW SOUTH WALES

**President:** Jim Corbin, VK2YC.  
**Secretary:** David H. Duff, VK3EO, Box 1734, G.P.O., Sydney.  
**Meeting Night:** Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.  
**Divisional Sub-Editor:** Harry Powell, VK3AYF, 5 Russell Avenue, Wahroonga.

**QSL Bureau:** J. B. Corbin, VK3YC, 78 Maloney St., East Lismore, Sydney (Inwards and Outwards).  
**Zone Correspondents:** North Coast, Mr. H. H. Hodge, VK3AH, Ryde Ave., West Kenmore; Newcastle, Mr. M. D. Sturt, VK2ASJ, 88 Dunbar St., Stockton; Coffsfield and Lakes: Harry Hawkins, VK3YL, 27 Compton Ave., Cessnock; Western: W. H. Stitt, VK3KJ, Cudlee Creek, 1000 Nth Coast of Southern: Roy Raymond, VK3DO, 42 Pitt St., Yass; Eastern Suburbs: Don Knock, VK2NO, 42 Yankin Ave., Waverley; Northern Suburbs: Harry Powell, VK3AYF, Russell Ave., Wahroonga; St. George: Chas. Coyle, VK3YK, 84 Carlton Cres., Kogarah Bay.

## FEDERAL

### RETURN OF VK3UM

Members of the W.I.A. will be pleased to learn that the immediate past Federal Secretary, Bill Mitchell, VK3UM, is due to return to the shores of his native land after three years abroad with his duties in the Military sphere. For what has been heard of Bill since he left on his tour, he has not had much time to devote to Amateur Radio in the U.K. although we hope he will come back with some interesting anecdotes.

With Bill's return there is the same fervent interest in the Federal Institute affairs as he had before he left Australia remains to be seen. His keenness and energetic application to everything he tackles would be greatly appreciated by the ranks of Federal Executive. What about it, Bill?

### DELAY IN ISSUANCE OF A.O.C.P.

#### EXAMINATION RESULTS

In conformity with Federal Council's directive, the Federal Executive made representation to the Department in respect of the continued complaints from A.O.C.P. candidates that on some occasions a seemingly unnecessary delay occurred in advising the candidate first of the results of the examination, and having passed, the allocation of his call sign after making application for it.

The Department explains that there is some delay in issuing the results of a December examination because, apart from the fact that the examination consists of other technical licensees have to be examined at the same time, the Christmas holidays intervene.

Even on other occasions during the year when A.O.C.P. examinations are held, other technical examinations are held at the same time. Current statistics show that the Department incurs a considerable sum of money each year in the conduct of these examinations collectively and unless an astronomical charge was made to the candidates, who are not responsible for it to be otherwise, under such conditions a handful of examiners have the task of correcting hundreds of papers and this takes time.

However, the Department has indicated that it is possible the advising of results to A.O.C.P. candidates. In the meantime, Federal Executive asks members to assist by explaining the details of the amount of work involved to candidates who have sat for the examination and become impatient for the result.

### INTERFERENCE IN THE 7 Mc. BAND

Representations have been made to R. G. Cawley, D.P.R. Minister for External Affairs, and H. L. Anthony, M.H.R., Postmaster-General, with reference to transmitters of Radio Pakistan interfering with Amateur transmissions in that portion of the 7 Mc. band allocated by international agreement to the Amateur Service.

## VICTORIA

**President:** G. Dennis, VK3TF.

**Secretary:** C. Gibson, VK3TF.

**Administrative Secretary:** Mrs. G. Pickering, Law Court Chambers, 191 Queen St., Melb. Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College.

**Divisional Sub-Editor:** K. E. Pinott, VK3AJF, 111 Brunswick St., Carlton, S.E. 2.

**QSL Bureau:** Inwards: Graham Roper, VK3ZB, 25 Lucas St., South Caulfield; Outwards: Frank O'Dwyer, VK3OF, 190 Thomas St., Hampton, S.7, Vic.

**Zone Correspondents:** Western: T. B. Rodda, VK3AR, Box 254, Werribee; Central: Western: W. W. Wines, 11 Redford St., Warrnambool, and E. Giddings, VK3ANQ, 8 Nelson St., Warrnambool; North Eastern: A. D. Buchanan, VK3EP, "Booroorabbin", 42 Pitt St., Mildura; Eastern: Leo Dwyer, VK3SG, and John Battwick; North Western: C. Case, VK3ACE, Cumming Ave., Birchip.

## QUEENSLAND

**President:** A. J. Weddell, VK4FT. **Secretary:** V. P. Green, VK4VS, Box 638J, G.P.O., Brisbane.

**Meeting Night:** First Friday in each month at the Royal Geographical Society Rooms, Ann Street, City.

**Divisional Sub-Editor:** J. T. Hope, VK4XL, Royal Parade, St. John's Wood, Ashgrove.

**QSL Bureau:** Jack Files, VK4JF, Vanda St., Buranda, South Brisbane (Inwards and Outwards).

## TAASMANIA

**President:** W. W. Parsons, VK5SP.

**Secretary:** R. G. Harris, VK5RR, Box 1294K, G.P.O., Adelaide. Telephone: J 1151.

**Meeting Night:** Second Thursday of each month at 17 Waymouth St., Adelaide.

**Divisional Sub-Editor:** W. W. Parsons, VK5SP, 19 Victoria Avenue, Rose Park.

**QSL Bureau:** Geo Luxton, VK5RX, 8 Brook St., West Mitcham, South Aus. (Inwards and Outwards).

## WESTERN AUSTRALIA

**President:** G. A. Moss, VK6GM. **Secretary:** J. Mead, VK5LJ, Box N1002, G.P.O., Perth.

**Meeting Place:** Perth Technical College Annex, Mounts Bay Road, Perth.

**Meeting Night:** Second Tuesday of the month.

**Divisional Sub-Editor:** W. E. Coxon, VK5AC.

**QSL Bureau:** Jim Rumble, VK5ERU, Box F132, Perth, West. Aus. (Inwards and Outwards).

## TAASMANIA

**President:** L. E. Edwards, VK5LE.

**Secretary:** F. J. Evans, VK5TF, Box 371B, G.P.O., Hobart.

**Meeting Night:** First Thursday of each month at the Photographic Society's Rooms, 163 Liverpool Street, Hobart.

**Divisional Sub-Editor:** L. E. Edwards, VK5LE.

**QSL Bureau:** T. Allen, VK5AL, 6 Thirza, North Hobart. Outwards: Ray Calvert, VK5TC, 310 Park St., North Hobart.

**Zone Correspondents:** Northerns: Mr. A. Chaplin, VK5CA, 56 Merarly Rd., Launceston; North Western: K. R. Wilson, 11 Cunningham St., Burnie, Tasmania.

with five stations in the province of Turin. C.W. or phone contacts will qualify, but must not be mixed. After the initial award, further contacts of 10 or more earn the recipient a sticker. Claims for awards must be made direct to the Secretary, Casella Postale 200, Torino, Italy. Cards will be returned with the certificate, and the holder is permitted to use the prefix "DT" on his cards or correspondence. Writer knows of a much speedier method of achieving DTs.

Eric, BERS195, has been performing a few weeks relief duty at Nhill. Seems to be more popular than the football, the league football than the absence of home comforts.

Cards through the Federal Bureau reached an all time low during July. This is a fairly reliable barometer of the conditions obtaining on the DX bands during the previous few months.

A much travelled Ham is Van VP5AP, according to a QSL recently received by Austin VK5YL. The card was for a contact with VK5YL. After leaving Kenya, Van became SU5CM for one month, then spent some time as HZ1WP. His current QTH is VP5AF. Officers' Mess R.A.F., Tarshyne, Aden, Southern Arabia.

## NEW SOUTH WALES

At the time of writing these notes, the Remembrance Day trophy is still a couple of weeks off but by the time they get out in print, the early rounders will have given it to their local club. We need every log we can get to help the State's score along. So how about it, chaps?

With the general strain of contests and the like, now should be a timely reminder to start getting gear ready for the National Field Day which is to be held some time in February-March next. It takes time to get gear together for sure, show do, don't leave it until the last minute.

The last general meeting of the Institute resulted in a roll up of approximately 100 members to hear a lecture by Angus Robertson on "E.C.I. In the Field". The Council was very well received. After the lecture, the two motions of which members had received notice, were put. The first, regarding the County Government, was withdrawn; and the second, regarding the re-admission of C-motors, was passed. The Council now has the OK to go ahead and put the necessary machinery into motion so it can legally carry out the terms of the motion, and the motion passed motion "here-heres" around the hall after some well-chosen words by Angus Robertson, it is evident members don't wish to come along to meetings to argue over what is to become of the C-motors, his boy and it's radio work.

Incidentally, city members or visiting country members, have you been along to a council

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meeting yet? You are quite entitled to go along and see how your Council operates.

At the last meeting, a few members went around sporting classy little labels with three owls sitting on an aerial, underneath being their name and call sign. The labels were quite unique by the way. I suppose a quick glance, to be a photography process. Anyhow, they turned out to be members of the Night Owls Club. To qualify for this sinister organisation, and sit on pastures night, at least five nights (perish the thought!) Some of the active members of this club are 2FA, 2ACD, 2AYH, 2ACI, 2ARI, 2JN, 2AWN, 2AGW and 2AVG. All active members of the club are invited sometime on sun days. Various subjects are discussed in the round table style and visitors are welcome if they just v.f.o. into the Net.

Over the week-end of 1st and 2nd August, the President, Jim Corbin, 2YC, paid a surprise visit to Forbes to consult Hugh 2WH, the District Commissioner of the Western Zone, about country re-organisation. A very busy Saturday was spent with 2WH, 2AMW of Forbes, and during the afternoon, 2EL, Alan 2SJ and Jim 2JV came over from Parkes to take part in the meeting. 2KZL, the Ham at Hidden, Tx Hunt will be held with the Tx operating on 35 Mc. and 144 Mc. Following this, will be a Radio Quiz and various competitions connected with Amateur activity. This will be the only night meeting, a large gathering of Hams is expected. So tune up your DF Receivers on 144 and 35 Mc., you local chaps, and make a note to attend these functions.

2KZL is intended driving to Sydney that Sunday afternoon, and will be in the bush and called in on Don 2ALX at Orange and found him demonstrating s.s.c. to a group of students from the Wocular College. 2NS at Wagga Wagga, the transmission was partly heard in VK2, but the 2600 transmission covered a goodly part of the State. Hugh and John are to be congratulated on a very fine effort, at very short notice, but that's another story—ask John about it, some time.

2ARV intended driving to Sydney that Sunday afternoon, but was held up in the bush and called in on Don 2ALX at Orange and found him demonstrating s.s.c. to a group of students from the Wocular College. 2NS at Wagga Wagga, the transmission was partly heard in VK2, but the 2600 transmission covered a goodly part of the State. Hugh and John are to be congratulated on a very fine effort, at very short notice, but that's another story—ask John about it, some time.

2ARV is being arranged for later in the year.

#### COALFIELDS AND LAKES ZONE

This zone is pleased to be able to welcome a new Ham to its ranks in the person of Doug 2ASL of Wyong. He is active on 40 mcx and has also been operating on 10 mcx. Doug is looking forward to hearing a strong signal from Avoca as the news has come through that 2EH has at last been hooked on to the a.c. line. While with us, the Errol 2AVC, 2ASL, as regular on 80 mcx and an occasional burst on 40 mcx. 2AMU found some good signals on 21 Mc. recently. 2EKR seems to have disappeared, but I imagine Cec is likely to bob up at any time. 2ARV is still active on 40 mcx.

2RU has effected repairs to the beam and is now back on the air. 2ARV is the only sign of Major's organising ability in such matters. 2KFF appears to be sticking to 20 mcx. 2PZ continues on 80 mcx and even got the rig tuned up on 40 mcx for a contact. 2VU appeared on 80 mcx and 2ARV on 40 mcx and a v.h.f. net as due to re-organising the installations. 2ANAU reports that shearing has been his main activity, but has found time to build a first-class frequency meter. Maybe it will even count sheep.

#### SOUTH WESTERN ZONE

2BQ at Goulburn active on 80 mcx, with a good sig. Nice to hear you again, Jim. Geoff 2BQ, Ross 2PN at Tumut active most bands, 2BQ on 80 mcx and 144 Mc. Don 2BS at Albury also active on 80 and 40 mcx. 2BQ has a 20 mcx converter ready for 144 Mc. Lynn 2AGE, Coolamon, active on 80 and 40 mcx with a nice sig. Best of luck with the DX, Lynn. Have not heard 2BQ for a while. What about coming on sometime, Ray? And "emphatically" the question again. Stewart 2PL at Griffith also not heard very much on the bands. Has Ted wound those coils for 80 mcx yet? Stewart? Alf 2BW had condensers on 80 mcx have been bad for the last two South Western Zone ragchew's at 1920 hours, Wednesday evenings; we are hoping for better condensers and a few more starters in future. Regular customers are 2BQ, 2PN, 2RS.

The arrangements for the South Western Convention are now in order, the date set down for the "do" being 31st October/November, 1953, at Wagga. Alf 2BW, at Wagga, the organiser, being ably assisted by Stan 2AID.

Don't forget the Zone ragchew at 1930 hours, Wednesday evenings. We would like to hear you and your views and ideas for the Convention.—2AJO.

#### HUNTER BRANCH

The July meeting of the Hunter Branch was held at the Tighe's Hill Technical College on 10/7/53, the Chairman being Johnny Clarke, with twelve members in attendance. Max 2OT lectured on "Hints and Kinks", subject which caused much discussion and lively interest. It was even suggested that a night be set aside and Johnny 2DZ and Max 2OT be invited to talk and some "backboards" be allowed to be helpful to others with their equipment.

A Field Night and Picnic Day have been arranged for Saturday night, 3rd October, and Sunday, 4th October. The Picnic Day is to be held at Blackall's Park where sports, games and dancing will be held and a meal and ice cream provided for the kiddies. No Ham activities will be held on this day so as to give the XYLs a welcome respite from Ham Radio.

The Field Night is to be held the previous night with the Ham activities to be held on the Hidden, Tx Hunt will be held with the Tx

operating on 35 Mc. and 144 Mc. Following this, will be a Radio Quiz and various competitions connected with Amateur activity.

This will be the only night meeting, a large gathering of Hams is expected. So tune up your DF Receivers on 144 and 35 Mc., you local chaps, and make a note to attend these functions.

2K4XN is constructing and testing gear to take to VK4 later in the year. Norm 2ANA, heard occasionally, says it's too cold in his shack this weather. Neil 2ANL has at last some time to do some work for himself and has acquired interest in 8 Mc. John 2ANL has been studying mysteries of tape recorders. Fred 2AGY and Bill 2XT active on 2 mx. Max 2OT using 15 element stacked array to good advantage. 2ANL on 35 Mc. and 144 Mc. Ernie 2FP taken a sudden interest in 144 Mc. and thought you were a strictly 10 mx man, Ernie. The Technical Radio Club has been granted a license and call sign, VK2TAIL, and Len 2QB is on the committee. I would like to add that many contacts on 3 and 7 Mc. and phone and calls Ron 2ASJ was missed greatly from 7 Mc. when he had to spend a week in bed due to illness, but he is on the mend now. Les 2AOR had a few days off hospital due to falling off a moving train, but no damage was caused either to Les or the train—so all's well. Associate Syd Daniels holidayed at Taree Bill's 2AAR received from his eye operation and is improving rapidly.

Next Hunter Branch meeting will be on 11th September, so make an effort to attend.—2AOR.

#### STOP PRESS NEWS

The gang around Canberra way are advised of a get-together to be held at that city on 3rd and 5th September. All interested should contact Ken Finney, VK2AIL. I am told that the club rooms of the Canberra Club is quite a place with a mod. con. etc. I wonder if Noel 2JG could be talked into writing notes for this column about the club. How about it, Noel?

#### VICTORIA

The August meeting of the Victorian Division was held on the fifth at Melbourne Technical College. An exceptionally good film was shown to an audience of approximately 80. Unfortunately, I was unable to get any movie, and my spies have not supplied any other, gen. However as the meeting started late and the film ran for nearly two hours, there was little time left for general business. The next meeting will be held on the 2nd of September, so don't forget there is no meeting during September as the M.T.C. will be closed for end of term holidays.

The weather during this past month has been greatly restricted, most of the time being spent working on the rig. Most noticeable the way

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28	— 30 "	+21,000	— 22,000 "
50	— 54 "	+700,000 Mc.	and Above.
144	— 148 "		

\* Available for emergency network purposes only. Normal Amateur activities are not permitted in this band.

Temporary allocations.

the 29 mc gang is drifting to 40 mcx. Just to be different, tried 20 mcx once and myself, May, as well have gone on 288 Mc. At least there is an a.w.l. or two. All I heard was 3APP and a harmonic from a gent on 40 mcx. Max had managed only three contacts during the day. Give me 40 mcx any day. Heard 3APP trying to raise antenna receiver and when I say heard, I mean heard. No need to strain the ears now Jock 3RN building all-band final and hand-switched coupler and threatening to come to us. I heard the poor Rex 2SW the "Zephyr" dash across Prince Edward one day recently—still looking for the Tx Len? 3ALK at last on with new rig. Amongst the regular visitors were 3QO, 3ALH and a.w.l. Norm 2GOD, Norm 2GOD, Norm 2GOD he has been hearing a few VK2s and VK4s on 6 mcx lately.

Have been to see Tom 3EJK whilst he is in hospital. Very pleased to report that he is making very good progress and looking remarkably well. He expects to leave hospital in about a week, so watch out Parsons, W. P. W. his stock of records has been newly sharpened, and there has been a shortage of spuds, etc. However, I sent him a carton of Cravens, so I'll be OK.

#### NORTH EASTERN ZONE

Amongst other things, Chas 3ACW is doing some research into local history. Did hear that Associate Jim Harrington had the XYL in hospital for a time while a back. Ken 3KR and Keith 3KZ are still active on 20 mcx DX and Vic 3ARX has opened up in this band. 3ARL and Des 3DF, who was using only four wails, are both keeping the bands warm. George 3ED is braving the cold in his shack, while Tom 3TS has been for a short spell in the warmth of VK4. Syd 3CJ is sparkling up with a new beam antenna, also encouraging Des 3CO on towards v.h.f. Col 3WQ is not impressed him either, but Rex 3UR hopes the XYL now and does not bother about things like the weather.

It would seem that anyone in trouble with aerial coupling or loading could turn to Jim 3AR for service. Alex 3AT is a street or two ahead of me, and I am sure he is still putting the new tx. Johnny 3ACK has not been sighted yet and Peter 3AJP is building b.c. rx's. Pre-smurly 3HZ must be still busy, but I overheard enquiring after Les 3AJL. Stan 3AGT is still active, and his two wails and serials were down at time of writing. Doug 3LJ and Alan 3SQ are also in the group not making much noise at the moment.

#### SOUTH WESTERN ZONE

A reminder to all members of the Zone, and others who may be interested, the Zone Convention is to be held at Colac on the 7th and 8th November. 3AGV and 3AKC will be pleased to supply any information you may need. The Zone rag-type group goes great guns, 25th July saw 13 members present. In the 2nd of a Hamfest to be held at Hamilton on Tuesday, 26th February, 1954, on the occasion of the visit of Her Majesty Queen Elizabeth II. All members are welcome to go along and participate for this "do". 2EKR gang are very keen about it, so it looks as if it is on—more about it later. 144 Mc. is getting a boost, 3AKR, 3AGD, 3AGC and 3ANQ are stoking up. 3AKR is a cripple at the moment, trod on his foot and broke a bone in it.

#### EASTERN ZONE

The continued bad conditions are certainly having a bad effect on the Eastern Zone. The boys are getting tired of calling Q for hours and hours and are getting very impatient, putting things away till such time as conditions show a change for the better. There have not been many on the hook-ups lately, but here again conditions have been a governing factor.

It is with pleasure that I report that Ted 3ALA is now a proud father, congrats Ted. Poor old 3HK is back in service with a new temper, again, this time it's the power supply of the Type 3 MK. II that has gone up. You certainly are a heavy hand on transformers Ted. The time that has gone to pieces, Keith 3SS and son David 3SY have been having a rough time, the radio servicemen certainly seem to have a great time, don't they! Incidentally, David has just finished his National Service Training.

2 mcx seems to be the favourite topic of conversation these days, but nobody seems to have got past the talking stage yet. It is the considered opinion of all around the Zone that it is high time Associate Alf McKrell quit stalling and sit for his A.O.C.P. exam. Come on Alf, it's the end of the road.

Things are fairly quiet up Bairnsdale way with Jack 3FK the only one to break the silence. I don't want to mention any names, but there's a certain gent up that way who has

held a licence for over a year now, has enough equipment to fill a three-ton truck and yet has never put out a signal. Doug JASE has returned to the Zone and it is hoped he will continue to keep the Zone in the DX picture. Leongatha is well represented these days with Ron, Jim, Rex and Gwen keeping up the good work.

#### Sale Sub-Branch

The monthly meeting of the local Sub-Branch was held at the home of Doug Hamley, of Sale. Doug has a complete theatre at his home and commands the interest of all present till quite a late hour. An inspection of Doug's equipment was the first thing undertaken, and everybody agreed that the set-up left little to be desired. Doug then presented quite a long programme of films, very interesting. The President, Osse 3AHK, thanked Doug for his hospitality and said that the Sub-Branch members were indeed fortunate to have such a genial host. In reply, Doug invited the boys to have another meeting at his place in the not too distant future.

The next meeting of the Sub-Branch will be held at the home of Graham 3QZ. A good roll up from down Leongatha and Morwell way is expected and a good time should certainly be had by all.

#### CENTRAL WESTERN ZONE

Please excuse gap in Zone notes, but cropping for two months in record wet season, combined with moving to new shack, has discontinued things on the Amateur Radio side. However, with the Convention moving closer, interest in the same is mounting. A Central Zone hook-up attendance included 3ARM, 3IB, 3AFO, 3AKW, 3DP, 3IZ, 3ATR. Newcomer to the Zone in the person of 3IZ from Maryborough was welcomed to the fold. Some members also attended the Zone by breaking out also nearly ready to go on the high frequencies, waiting on an 8 Mc. crystal. Indeed, word to hear that 3INN is in hospital in Melbourne home at the moment, soon up and about again. Herb, 3AFO has erected a new 80 m. antenna which seems to be doing a good job. Main discussion was the forthcoming Convention which is well decided to be at Stawell on Sunday, 27th September. There will be hidden tx hunts and a portable tx scramble. An invitation to all interested to attend. If accommodation is required contact T. B. Rodda, Box

254, Warracknabool, as soon as possible. The gang is hoping to work it up into a good show with a few surprises, so see you from far and near at Stawell on 27th September. Listen to the 3WI broadcast for further information re the Convention.

#### QUEENSLAND

The attendance at the July meeting showed a slight improvement, opened at 8.15 p.m. with John 4FT in the chair and you can't faulting for 4OB, it was good to see a few of the old faces again, amongst those we haven't seen for some time were Gordon 4CH and Henry 4H. With a little more effort those who have been absent should soon have a chance to roll up to the monthly meeting. Aussie 4TN was to the fore giving all and sundry a identity instead of being just another face.

Lively discussion around a VK4 award took up quite a lot of time, and was eventually shelved for the time being owing to the difficulty in policing the award. My own observations are that it will be brought forward again in the near future.

It has been decided to go ahead with the trophy for our annual VK4 Interstate Contest to take the form of a shield with facilities for the yearly winners' names and call signs to be engraved. With this and other prizes, our contest should go ahead, and become very popular each year.

That QSL card position has been clarified to some extent by a compromise. That is QSLs to non-members will be forwarded, on the receipt of stamps to cover postage. Though myself I think the card should be sent to the post office for this reason. The attitude by one of our members with a bundle of cards was thought by the meeting, to be in the poorest of spirits of Amateur Radio.

Whilst on the subject of QSL cards, I wonder how many of you still honour your Division honour their obligations by sending cards to those who request them. A survey of my log over the past two years shows a 23 per cent. cards received to those sent out by over 5000. Amateurs, do you honour your Division in their black books, or is the QSL card no longer the final courtesy of a QSO?

After the raffling of the call book the meeting adjourned for Vince to carry on with his pre-

vious lecture on S.S.C. By the copious notes taken by some, and the look of bewilderment on the faces of others, one got the impression it is all done with mirth. By and large, the lecture was well received, and promised many interesting. It should win a few more converts to S.S.C. by those who like to experiment.

Thanks must go to Len 4NV for his donation of a crystal insert for the 4WI microphone. Also to Alan Jolly for the meter that has been wanted for some time, for the piece of equipment in our technical library.

Tom Athy is prepared to issue material in the form of a correspondence course to those in the country who require material in any way for their hobby. If you have any desire of taking advantage of this offer, please contact the Secretary.

Jack 4JF informs me that northern QSL cards will be fully honoured by Eric 4EL, accepting those who have stamp credits at the Inward Bureau, who will receive their cards by post until the credit is exhausted, then reverting to the distribution by Eric.

I thought that Ipswich spy had gone and got married, but he was right at the last moment with nothing to report. Though I do know Jack 4SF has shifted inside, to dodge the cold weather and also to re-build the shack. And new gear going in. Jack's other hobby the boat up the way are still in hibernation.

Rockhampton came through here with a bit of short skip one day and I gleaned the information that conditions have them down also. I believe Eric 4EC grabbed himself a quiet corner in the sun and had a longish hour. 4BW, 4WF, 4SE, 4DL, and 4DO doing a little on 7 Mc. 3.5 Mc. has been workable at nights with a few good signals, 4WI being heard on Sundays at SS. 4MT and 4L are working the 40 m. band, 50 Mc. 4L 4WD has erected himself a vertical and can be heard on 14 Mc. How do you like the change from Brisbane?

The A.O.C.P. Class is going quite well with an average of nine attending, most of the students are from the 4WD area. The average non-attending attendance shows the class down, owing to those who miss nights, getting behind the lectures.

At the time of writing, sad to relate, Jim 4PZ is in hospital dangerously ill after an accident with his motor scooter. I know this Division and his friends in other States wish him speedy recovery.

The next concern for us to worry about is the VK-ZL DX Contest. We would like to see

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some more entrants from this Division, and give Keith 4KS some competition. Not forgetting the highest, VK4 gets a certificate and probably some piece of equipment for his effort. We have in mind another "do," down to Perth, in September, or October, to keep it in mind and get the portable gear going. To those country chaps nearer Brisbane, watch for us, and come down and enjoy yourselves.

A thought for the month. Are you satisfied with the management of your Division? If not let us see you or at least hear from you.

And as for the slanderous statement by that guy from the B.B.S. is being recruited by S.A. Radio, I can assure you that it is being of the highest integrity no one can inveigle me to tamper with the truth. If the miles between us were fewer, perhaps an affidavit of honor with blinder eyes would be the best witness that I have, on these swords south of the house. But then being at a disadvantage by his jacket, ca ne fait rien, n'a pas d' honneur.

## SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division took the form of a buy and sell night and a more than average number of members attended. The night was extremely well spent and it went to show just how popular these nights really are when over 100 members will come out into the rain and wind just to see a lot of junk change hands. Of course I would be the first to admit that the Division is not down to 100 members and Ross BLW put on a show that is equal to anything that could be seen in vaudeville, but even so these buy and sell nights certainly have something to do with the members' desire to buy and sell. I picked up a lot of useful bits and pieces at a reasonable price. Another side to the picture is that here in VK5 the Division takes out its ten per cent. on the sales and puts the money toward building test equipment. The Division is a great help to the members without the members having to pay for it, it is a division, and that is a decided strong argument.

Nobody bought anything of any importance, although quite a few bid in a manner that suggested importance, and the President astonished everybody by buying a telephone sounder for two shillings which gave him a lot of entertainment during the night because he would put the sounder down on a table or chair and just as a number of evil intentioned members were reaching out their hands to whisk it off into this air, he would land a Hampshire on the table and politely pick up the sounder and walk off making uncouth noises. This went on all night, but of course he eventually tripped up. Somebody engaged him in an argument and when it was over he was also fished out. They pinched the nuts, the screws, the base, the tension springs, in fact the only thing that held the sounder together was a rude note, the mere suggestion of which caused the bunch visibly to shrink. The money was then passed through the mail all this week, including several doodahs that certainly were never on the sounder in the first place. Very funny! Very funny! But what will you, you characters do next year when you are no longer in village idiot? Sorry I mean the President! If I have much more of this disrespect I will go back to my other Division over the border, they will welcome back I think. I hope I am right.

The meeting was adjourned at the record hour of fifteen fifteen and it was nearly midnight when the members of the Council, who handled the business side of the night with their usual efficiency, finally put out the lights and made their way home homewards, although the President could be heard four blocks away giving his opinion of certain relations and friends who were definitely light-fingered and were definitely devoid of any principles, the last being the fellow Councillor. Opportunity was taken at the meeting to present to Les SLC his long delayed certificate for being runner-up in the VK-ZL Contest, also to bid a welcome to Doc 5AC who did not get the time to attend as village idiots as of yore, but is as welcome as ever. "Nobby" 5GY of Whyalla was also a very welcome visitor and we hope that we will see more of him in the future.

The South Australian Division of the W.I.A. is now an incorporated body. Pause here for ten-gun salute, tumultuous applause from the assembled masses, and strange noises from the VK5 scribe. Thanks to the efforts of solicitor Don Elliott (ex-5RD), and Doc 5MD, the leading

Division in the Commonwealth now has full legal standing. Both these gentlemen have for years put in a terrific amount of spadework into this incorporation business, and they must both feel gratified now that it is an accom-  
plished fact. The V.I.A. is now a registered company, no, no, not that gentleman's seal, but, by the word seal, I mean a seal with stamp things, and its prestige has risen by leaps and bounds. For the benefit of some of the other Divisions, at times we have made distasteful remarks regarding the VK5 President, I take the liberty of drawing their attention to the fact that I now have legal standing and will not hesitate to invoke the services of the law if necessary. Incidentally my legal standing now makes it very easy to answer the two statements made in last month's magazine by my contemporary in VK5. The remarks quoted concerning a Mr. Tipper are not true, and the same may be taken as fact and as to why VK5 finds it necessary to have a "Government hostel" the answer is simple. Firstly we have a "G.H." for the purpose of hanging Doc's seal, and also to keep a check on the VK5 members who pinch Holden cars and try to sell them in VK5!

News was received this month that a radio club had been formed at the Woomera Rocket Range and that a transmitting licence for the said club was on the way. It was my intention to give the club plenty of publicity in the local press and radio, but, in the meantime, the VK5 Council was somewhat divided in its opinion as to the advisability of such publicity, in view of the possible public reaction to the formation of a transmitting club in a Government location. I suggest in view of the recent articles published in the radio trade press in VK5 and VK5 regarding the opportunities of Radio Amateurs to unwillingly pass out information of a possible vital nature to foreign observers. We, as Amateurs, realize just how stupid such press articles really are, but the general public, in their lack of knowledge of Ham activities, read such press articles with a different viewpoint. Until such an article is given to the Magazine Committee in this rather controversial matter, I will handle the news and any information concerning this new and welcome radio club with care. Suffice to say at present that the boys behind the club are enthusiastic and keen workers for Amateur Radio, will be looking for contacts with eager anticipation on probably all bands, and last but not least, as long as I can remember that some unusual variation of the station and frame our conversation to suit the existing set-up, then all should be well. Peculiar enough, the "powers that be" have been more than helpful to the club and will be all in their power to assist the boys at Woomera to overcome the obvious sticky points that have arisen, and with this in view, it might appear that I am acting in a manner reminiscent of an "Old Woman" in Ham Radio when a sitting spot for undesirable publicity that I am prepared to temporarily drop my natural devil-may-care attitude and for once in my life view such a matter seriously. Anyway, it can never be said that I forgot to allude to the new club in my notes!!

## UPPER MURRAY AREAS

The usual monthly meeting of the Upper Murray gang took place on the same night as the city club, but with more on the same lines. The band had nothing to say. Following an informal discussion, principally about a midget 6 m tx and a converter built by the most experimenting experimenter Harry SKW, which was the result of a long night's work, and credit to the builder, the host for the evening, Hurtle 5RE, provided a picture evening for the gang using his own projector and films provided by a well known commercial organization. The man who had the film agreed not to mention, so we will climb back into my Shell! Anyway, a good time was had by all and everybody left after the meeting with pleasurable feelings of anticipation for next month's meeting.

SMA has made several appearances on 3.5 Mc. Fred trying to organise the old Northern Net of Sunday morning fame, and with this in view, he invites all interested parties to appear on 3.5 Mc. at 9:30 a.m. each Sunday.

SKW has made several appearances on 3.5 Mc. to the general satisfaction of Harry. 5RE

## TO WHOM IT MAY CONCERN

A letter has been received from *"Fido."* The Magazine policy is not to publish any letter under a nom-de-plume unless the writer furnishes his name and address, not necessarily for publication—Editor.

still appears mostly on 7 Mc. each Sunday, and whether Hurtle can be persuaded to come down to 3.5 Mc. remains to be seen, or should I say heard. His many interests beside his hobby of Ham Radio makes him a very busy man and now, as he is the President of the Gliding Club of South Australia, he will be even busier. As one President to another, I hope that they don't treat your glider in the same way that my members treated my tele-

graph. 5CF has not been heard on the air for some time. 5CF has not been sighted either for many a day. Hurtle was unable to attend the monthly meeting nights for two months because of that very problem. He has however built a v.o. and has been operating on 7 Mc. To his detriment, Alex was able to work a KHS the other evening, using round about four watts. Just goes to show what can be done at times.

STL still finds time to visit the radio range occasionally, per medium "Rattling the 'iron'," but most of his time is spent in keeping the local constabulary away from his shack when he is on 3.5 Mc. Yes you guessed it, Tom is still on 3.5 Mc. and is still the "King of Receivers Interference." His signal is only about fifty yards away from the Police aerial, which is all I need to say I think. Tom is endeavouring to have the Police shifted, but is not very hopeful. Thanks for the notes, Tom.

## SOUTH EAST AREAS

The notes for this area are written this month in a state somewhat of apprehension, due to the "ringed-over" tactic of the v.h.f. scribe for VK5. Not only does he go at me whenever he meets me in the street, but he has now descended to using words in his notes to describe me, the meaning of which I cannot find in my dictionary. I cannot help it if my spy from the South East can only afford to do the doings of the game on 2 Mc. after all he has to eat, and no notes means no financial assistance. However, I have found a way out, I have just read in the magazine that even dogs can be taught to speak the code, and with this in mind I will just bark when I am in trouble and then all will understand. Don't come too near me in case I attempt to kick you, Bowen!

5CH is still only heard on wool-woof, but Charlie is still working hard to build a discine aerial for that band and in a perfectly normal way. 5JA has now gone completely out of circulation and try as hard as I can I am unable to even hazard a guess as to John's activities. One thing I am sure of is that he has now heard on wool-woof. 5TW has finally got the bugs out of his wool-woof gear and Tom has been heard on skeds with an excellent signal. 5MS is re-building the main rig so as to incorporate the new 5000 watt power supply and in time during the R.D. Contest, Smart has still managed to keep his wool-woof skeds.

5KU is also one of those preparing for the R.D. Contest and I suppose that he is becoming interested in the wool-woof bands and all are looking forward to hearing him soon up there. 5FD has had the misfortune to burn out a relay transformer, but John hopes to have it on deck again soon; what, no wool-woof gear? Well, I am sure that the man in the South East has built himself a discine aerial to permit him to eavesdrop on the wool-woof band. He has been getting excellent results with the serial. 5CZ has now decided to have a 5000 watt rig made after numerous wasted hours in calling on sked and no contacts. Col says that apart from skeds on the wool-woof band he has little to report, but he expects some more news from the lower frequencies and at the same time applying himself to the oft-mentioned reference to the wool-woofs. Don't mention it Col, I am not frightened of any wool-woof scribe!

Yip-Yip has been by quite a number of nose-achers who keep poking out my shoulder as I type, just what is a discine aerial. Well, my uneducated workmates, a discine aerial is a type of aerial that is used on the wool-woof band and is known as a "bow-wow." Yip-Yip, in push pull parallel with 5CZ and 5Yip-Yip and a GGGRRRRRRRRRRRRRR. I could tell you more about it, but to do so would only be treading on the corns of the wool-woof scribe for VK5. See him if you want any more information. Yip-Yip-Yip-Yip

## WESTERN AUSTRALIA

Annual events always need a mention, and on this occasion it is the Annual Dinner. As last year, the function combined that of the Radio Society (the only other purely radio club in W.A.) and the Wireless Institute. A line over 60 members and friends sat down to the dinner under the chairmanship of 6GH, Mr. W. G. Hayman. After the loyal toast, the toast of the two organisations was proposed and responded to by each President, 6GM and 6KU, George Moss and Ron Hugo respectively.



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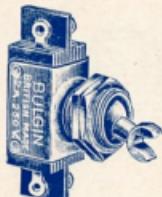
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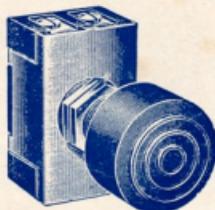
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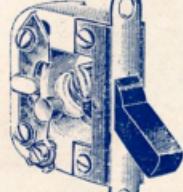
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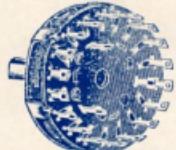
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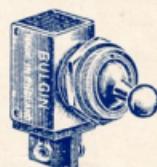
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